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Green Economy in Eastern Partner Countries

**EU4ENVIRONMENT
FOURTH REGIONAL ASSEMBLY MEETING
SPECIAL SESSION – CIRCULAR ECONOMY**

**23 September 2022
9:30 – 17:00 CET**

HYBRID FORMAT

Draft Summary Record

This document summarizes the discussion during the Special Session on Circular Economy, organized within the fourth EU4Environment Regional Assembly on 23 September 2022.

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Key Conclusions and Decisions

The Special Session dedicated to Circular Economy took place on 23 September 2022, as part of the fourth meeting of the EU4Environment Regional Assembly. The session was organized in a hybrid format and gathered some 90 participants who discussed the benefits, opportunities, and challenges in the transition to Circular Economy in the Eastern Partnership (EaP) countries, with a focus on industrial waste mapping (IWM). The participants included high-level representatives/EU4Environment National Focal Points from the Ministries of Environment and of Economy of the EaP countries, National Action Coordinators, SMEs development agencies, Statistical Offices, representatives of sub-national authorities (including municipalities and mayoralities), the business community and civil society organisations, alongside representatives from industrial enterprises and public/private organizations involved in waste management. The meeting was also attended by the representatives of the European Commission, international organisations, the “EU4...” family programmes. The meeting was organised by the EU4Environment Implementing Partners (UNEP, UNECE, UNIDO, OECD and the World Bank).

During the Special Session on Circular Economy, the participants:

- Took note of the **EU’s new circular action plan** adopted in March 2020. The plan targets how products are designed, promotes circular economy processes, encourages sustainable consumption, and aims to ensure that waste is prevented and the resources used are kept in the EU economy for as long as possible;
- Took note of the **results of the industrial waste mapping pilots concluded in Azerbaijan, Georgia, and Ukraine**. The representatives of the pilot regions described their experience, challenges in data collection and cooperation, as well as expressed their commitment to continue the waste mapping process. As a pillar of Circular Economy, IWM promotes the minimisation of industrial waste;
- Welcomed the **key lessons learnt and recommendations** provided for the three IWM pilot countries which would allow for the findings (identified waste types waste sectors, and waste management challenges) to be replicated in other EaP regions;
- Expressed appreciation for the positive experience provided by the **Industrial Park Jakobstad** in Finland, which focuses on solving waste, organizational, and production issues through industrial symbiosis;
- Expressed their **commitment to engage further** in addressing waste and circularity needs.

About EU4Environment

The “European Union for Environment” (EU4Environment – Green Economy) programme aims to help the EU’s Eastern Partnership (EaP) countries preserve their natural capital and increase people's environmental well-being, by supporting environment-related action, demonstrating and unlocking opportunities for greener growth, and setting mechanisms to better manage environmental risks and impacts. The programme is funded by the European Union and implemented by five partner organisations: OECD, UNECE, UNEP, UNIDO and the World Bank. The implementation period, including the implementation of Result 4 activities, is 2019-2024.

For more information, please visit www.eu4environment.org.

Item 1. Circular Economy in the European Union

The opening remarks provided by **Ms Tatiana Chernyavskaya**, EU4Environment Project Manager at UNIDO, in which she stated the house rules and what circularity entails for UNIDO: the minimization of input materials, the redesign of goods so that they are durable and repairable, produced using renewable energy sources, and focusing on the minimization of industrial waste.

The participants took note of:

- Intervention by **Ms Guillemette Vachey**, Policy Officer at the Environment and Climate Action (DG NEAR) who presented the [European Union \(EU\) Circular Economy Action Plan](#). This new Plan is one of the main building blocks of the European Green Deal, which represents the EU's growth strategy. The EU's transition to a circular economy will reduce pressure on natural resources and will create sustainable growth and jobs. It is also a prerequisite to achieve the EU's 2050 climate neutrality target and to halt biodiversity loss. Ms Vachey noted that currently only 12% of materials used by EU industries come from recycling, while the annual waste generated from industrial production is expected to increase by 70% by 2050. These figures reinforce the EU's approach in moving from a linear to a circular economy. Within the Circular Economy Action Plan, 35 actions are set to make sustainable products the norm and empower consumers and buyers, whilst remodelling key value chains, and reducing waste. Ms Vachey reminded that the Commission has proposed a new regulatory framework on batteries, launched the Global Alliance on Circular Economy and Resource Efficiency (in coordination with UNIDO and UNEP), drafted proposals to review the EU rules on persistent organic pollutants and the waste shipment regulation, and works on a legally binding agreement to combat plastic pollution. Work is also done to make sustainable products the norm. The EU also focuses on sustainable and circular textiles, as well as packaging and packaging waste. As progress in the European Union needs to trigger progress at the international level, it is crucial for the EU to be a driving force for positive change using an ambitious agenda to engage with the international community, help keep resource use within planetary boundaries, decouple economic growth from resource depletion, and promote job creation in and outside the Union.

During the discussion on Circular Economy in the European Union, the participants took note of:

- Questions by representatives from entities based in the EaP region and working with industries and Small and Medium-sized Enterprises (SMEs):
 - (online) **Mr Elmar Isayev**, Head of the Secretariat of the Small and Medium Business Development Agency (SMBDA) at the Ministry of Economy of Azerbaijan, enquired about the main challenges in the transition to CE and asked about the existence of a methodological guide or handbook for different industrial sectors to use in their endeavour to become more circular.
 - (online) **Mr Andrii Hnap**, CEO, Data Analyst Waste Ukraine Analytics, asked about the role of the Digital Product Passport and if the market was ready for it, and what would be the main requirements for companies in key production sectors (such as textile) to incorporate it.
 - **Ms Nune Harutyunyan**, Executive Director, RECC AM, Armenia, noted that the approach towards vehicle recycling was a key priority in the greening of value chains in Armenia. Ms Harutyunyan enquired about the EU measures or regulations that could be used as successful examples to promote the recycling strategies for old refurbished vehicles and about examples of tax reductions or financial assistance to further support the endeavour.
 - **Mr Johannes Fresner**, UNIDO Senior Technical Advisor, STENUM, asked if circular ideas (revolving around products, services, and financing) could be reflected in plans for general education. Speaking about the case of SMEs, he asked about vocational or continuous

education prospects (ways of thinking, tools, and knowledge) for those working in industries and trying to find a proper channel to implement such ideas practically.

- *The participants took note of two intervention by:*
 - **Ms Guillemette Vachey** responded that educational and vocational training would most probably be included in the [EU Green Deal](#), as all EU policies need to be in line with the sustainability goals of the EU. In the case of end-of-life vehicles, there is a specific European legislation in place which will soon be revised. As well, the [EU Digital Product Passport](#), a new approach to sustainability, can be associated with many CE initiatives and proposals. Based on a decentralised data system, this QR code would eventually become a requirement to enter the EU Green Market (for now, it still requires great effort from producers to provide information about their value chains, but the information transfer will facilitate cooperation and competitiveness). Ms Vachey also referred to the existing guidelines for products, which can be linked to the regulation on eco-design. This includes a framework for different products and relevant technical discussions, impact assessments, and international dimensions. Here, the best source of information remains the [Circular Economy Action Plan](#). In the transition from linear towards CE, the main challenges remain behavioural change, resistance to change, and the lack of awareness.
 - **Ms Angela BULARGA**, DG NEAR, added that there is a process of supporting the implementation of environmental law in the EU. Within it, progress is monitored regularly in each EU Member State. Currently, the third 2022 cycle of [Environmental Implementation Reviews](#) has been completed. These include country-specific hurdles and a summary of key trends, main challenges, progress, and examples of good practice. On circular economy and waste management, there are big differences in circularity rates and resource productivity between Member States.

The participants engaged in a first Menti exercise: a small online quiz was launched with the purpose of naming three stakeholders that have the greatest influence on the transition to circular systems. The most popular answers pointed towards national governments, local municipalities, the private/industry sector, consumers, and civil society.

Item 2. EU4Environment contribution to Circular Economy

The participants took note of:

The opening remarks by **Ms Elisa Tonda**, Chief of Resources and Markets Branch, Economy Division, UNEP, who gave a quick overview of how circularity is linked to progress towards SDG 12. She underlined that EaP countries largely remain on a positive trend on achieving key SDG 12 indicators (municipal and electronic waste generation, sulphur and nitrogen emissions, as well as export of plastic waste). She underlined that value chains must be viewed holistically and that a mix of instruments and interventions among different stakeholders is needed to enable strategic interventions towards circularity. Ms Tonda pointed out that this is the strength of a comprehensive programme such as EU4Environment, which combines the expertise of several organizations and implements activities within multiple project countries in a coordinated manner. In this respect, she underlined how specific areas of work of EU4Environment contribute directly towards a list of “enablers of circularity”.

In the panel discussion that followed, Ms Tonda gave the floor to country representatives to speak concretely about the work that EU4Environment supports at national level and which is helping countries progress towards circularity.

- *The participants took note of the interventions by the Implementing Partners and representatives of the private sector in the EaP countries, in which they commented on the plans to further increase waste*

management efforts, as well as the experiences and results for implementing Resource Efficient and Cleaner Production (RECP):

- Ms Irma Gurguliani, Deputy Head, Waste and Chemicals Management Service, Ministry of Environmental Protection and Agriculture of Georgia, highlighted how, with the support from EU4Environment, Georgia recently updated its Waste Management Strategy and Action Plans (for 2022-2026) following assessments and stakeholder consultations. The revised strategy and programme now include targets to advance the circular economy at the national level.
- Dr Tatiana Tugui, Director of the Experts Association Pro-Mediu, and National Waste Expert from the Republic of Moldova, explained elements of Moldova's National Waste Management Programme and National Waste Action Plan (2022-2027), also developed recently with the programme's help.
- Dr Johannes Fresner, Senior Technical Advisor, UNIDO, explained that SMEs also have a crucial role in promoting circularity and underlined how RECP is a tool to understand and get transparency in company's material/energy flows while looking at the lifecycle of their products/services, which, in turn, can lead to identifying eco-innovative business model changes.
- Mr Zviadi Gogoladze, Director, Teleti Poultry Farm LLC, Georgia, presented the experience of an SME producing eggs in Georgia, which participated in the RECP Demonstration Project led by UNIDO. Thanks to various analyses conducted as part of EU4Environment, the enterprise was able to better appreciate how waste generated from production (biomass), is in fact an opportunity to produce bioenergy.
- Mr Krzysztof Michalak, Senior Programme Manager, OECD, pointed out that finance is in many cases an obstacle to further progress on circularity. He stressed the need for encouraging private sector funding through Extended Producer Responsibility schemes, promoting access to international finance institutions as well as local (regional development) funds. He mentioned the example of the support provided to SMEs by Moldova's Organization for Entrepreneurship Development ([ODA](#)), [as well as](#) Georgian, Armenian, and Ukrainian local banks increasingly putting environmental conditions on the projects and investments that they contribute to.

Item 3. Industrial waste mapping pilots in Azerbaijan, Georgia and Ukraine

Ms Tatiana Chernyavskaya, EU4Environment Project Manager at UNIDO, introduced the scope of the industrial waste mapping pilot exercises conducted in Azerbaijan, Georgia, and Ukraine. The following summary presentations reflected the results of the pilots in Georgia and Ukraine and the preparation for the final validation stages in Azerbaijan, scheduled for October 2022.

The participants took note of the presentations of the international expert of UNIDO in the three pilot countries undergoing IWM:

- Presentation by **Mr Alastair Carruth**, UNIDO International Circular Economy Expert (Sweco International AB) gave an overview of the industrial waste mapping exercise, taking stock of the mapping process, the utilised industrial materials, and drawing data from two pilot regions within each selected country. This involved determining waste journeys, waste quantities, and key players. From there, potential alternatives and benefits were inferred to support the implementation of more circular management for all identified waste materials. The used strategy characterized the industrial bases, using available waste datasets, and including the financial situation of each base (collection costs, treatment market values, taxation and levies, gate fees, and storage fees). Due to a lack of data availability, a strategy was needed to align policies and goals within the waste hierarchy in all countries, and fiscal tools and market stimulation were recommended, overall.

The participants took note of the:

- Intervention by **Mr Henrik Toremark**, UNIDO International Circular Economy Expert (Sweco International AB), who summarized the findings from Azerbaijan's Baku and Absheron-Khizi economic regions:
 - Azerbaijan has waste laws, but not the EPR and waste hierarchy.
 - Almost 1.2 million tonnes of waste comes from households and industries in the two regions, every year. The most important sectors were construction (cement factories, metal

smelting and processing), textile and furniture, and the beverage sector. From 64 companies, 16 cooperated and provided their data, for which 16 types of waste were identified. In a year, these companies generated over 12,000 tonnes of waste (10,000 tonnes being organic).

- The top three waste destinations were landfill, energy recovery, and recycling or reuse; here, the six main types of waste were: waste oils, wood, metals, paper, glass, and textile waste, with only 13% of industrial wastes being recycled or reused.
 - The financial implications would be more than €1,000,000 in reduced collection costs and material value, per sector. When extrapolating to the four focus sectors in the two pilot regions, up to €35,000 in savings can be generated each year, or around €6 million in increased material value per year.
- Intervention by **Mr Alastair Carruth**, UNIDO International Circular Economy Expert (Sweco International AB), who summarized the findings from Georgia's Rustavi and Zestaponi Municipalities:
 - From 10 potential regions, Kvemo Kartli in Rustavi and Imereti in Zestaponi were taken on for the mapping exercise. The plans revolved around centrepiece data gathering, where four companies in Rustavi and five in Zestaponi participated in the mapping process.
 - In Rustavi, 89% of the 94,000 tonnes of waste produced in a year came from six waste types; in Zestaponi, 89% of the 21,500 tonnes of waste came from two waste types.
 - In Rustavi, the focus waste types included paper and card, end-of-life tyres, and mixed-municipality waste. In Zestaponi, the wastes derived from slag, to synthetic hydraulic oils, end-of-life tyres, and mixed-municipality waste.
 - Major hurdles involve the lack of data availability, but the findings also revealed attractive opportunities: various alternatives to reduce the need for incineration, and decrease collection costs by up to 70%.
 - Intervention by **Mr Alastair Carruth** and **Ms Emma Danielsson**, UNIDO International Circular Economy Experts (Sweco International AB) presented the case study of Ukraine, where the selected pilot regions were Slavuta City Territorial Community and Davydiv Village Territorial Community:
 - In Slavuta, the most important types of wastes were ceramics, gypsum, paper and card, sludge, and wood. In Davydiv, paper and card, organic waste, wood, plastic, ceramics, and metal topped the list.
 - Some of the most interesting opportunities for managing wood waste included recycling into wooden particle boards, downcycling, or using it for energy recovery.
 - The financial benefits were evident, but there was an acute need for a robust waste data system to allow for regional planning and mapping.
 - Practical support is still required for all businesses located in the two pilot regions.
 - Financial savings were not only possible but also highly rewarding; still, collaboration was needed to bring stakeholders together and take advantage of the shared opportunities between industries.
 - *The participants took note of the interventions by the Implementing Partners and representatives of the private sector in the EaP countries, in which they commented on the plans to further increase waste management efforts, and shared experiences and results for implementing Resource Efficient and Cleaner Production (RECP):*
 - **Mr Arif Karimov**, Tamiz Shaha OJSC, Azerbaijan shared his company's practice on improving circularity. Tamiz Shaha is responsible for the collection of household waste in the city of Baku, and gathers over 800,000 tonnes of household waste per year. For this purpose, an eco-industrial park was established near to the treatment plants, to transform waste in energy with the use of modern French technology. Segregation at source is also a priority for the entity, as it gives it the chance to retrieve recyclables and better capitalise on the advantages of the industrial park.

- **Ms Hacar Azimova**, Environmental Engineer, Carlsberg, Azerbaijan mentioned how the company participated in the creation of a framework for a possible extended producer's responsibility in the country. In addition, the company organises the segregation of waste, with more than 95% of the total packaging waste being recycled. A recurring issue is the lack of organisation in recycling coloured glass (at the moment, only transparent glass is recycled)
- **Mr Kakha Karchkhadze**, Scientific Consultant and Advisor, Biodiesel Georgia LLC, Georgia, shared his experience from both an academic and a private-sector field to emphasize the importance of collecting primary data from businesses. His company, the first bio-fuel plant in the South-Caucasus region, collects around 55 tonnes of cooking oil (bio-waste) each month and transforms it into biodiesel. This way, 120 tonnes of CO₂ (that would have otherwise been released into the air), are spared, while new and green jobs are created.
- **Ms Kateryna Savchuk**, Director, Regional Development Agency of Khmelnytskyi oblast, Ukraine, thanked all partners for their support and mentioned that the oblast was facing many challenges due to the war, including having its infrastructure severely damaged (this having also a negative impact on the environment), but the region expressed its readiness to continue its collaboration with the programme's implementers.
- **Ms Halyna Darchyk**, Head of Economic Development Department, Executive Committee of Slavuta City Council, Ukraine extended the city's gratitude towards all programme partners and mentioned that the city's 11 enterprises provided their data to identify and describe the waste situation available at the company level. From here, the companies received recommendations and interesting business ideas for the future (plaster treatment or timber treatment). Ms Darchyk emphasized that mental support was needed to change the mindset of businesses and people in order to implement change and ensure future cooperation.
- **Ms Margalita Arabidze**, Head of the Department of Sustainable Development, Ministry of Economy and Sustainable Development, Georgia, stated that the Ministry hoped to continue the existing cooperation as circular economy was important in all industrial activities. Since 2014, the Ministry has been involved in the Georgian association agreement, while also being a full member of the energy community and the general energy efficiency and climate change directives. These were all important documents covering the dimensions of decarbonization (with a focus on waste), energy efficiency, energy security, and innovation and technology.
- **Ms Iuliia Skubak**, Director of the Investment Department, Ministry of Economy, Ukraine made references to the Ministry's current work on attracting investment in the country, taking into account the existing opportunities that could be provided to industrial parks. For the latter, the Ministry was working to establish a concept in the national legislation and prepare a strategy for the development and transformation of industrial parks.

Item 4. IWM Guidelines for EaP countries: Key lessons learnt and recommendations for stakeholders to promote circular economies

The participants engaged in a Menti voting exercise, where a small online quiz was launched to name the main applications of industrial waste mapping. The most popular answers were: fill knowledge and data gaps, optimise the use of wastes and by-products, followed by: whole-system view of waste management and optimise industrial processes to minimise waste.

The participants took note of:

The opening remarks by **Mr Alastair Carruth**, UNIDO International Circular Economy Expert (Sweco International AB) who focused on the three core purposes of the industrial mapping guidance: to acquire

lessons from each pilot region, to test the replicability of the IWM, and to identify flexibilities available within the local conditions. For the scope of the exercise, financial, environmental, and geographic implications, as well as the involved sectors and stakeholders were also taken into consideration. Here, it was critical to characterize each industrial sector from the beginning to characterize the waste management sectors and start data collection. The strategy for the latter was to focus on up-front research, targeting stakeholders in surveys, checking the sample options, and taking into account local cultural conventions.

- *The participants took note of the interventions by representatives from the EaP pilot countries, in which they shared takeaways and recommendations for advancing IWM in the future:*
 - **Mr Tofiq Hasanov**, RECP Expert, ACE Group Consultant LLC, Azerbaijan presented lessons and recommendations from the national waste and resource efficiency endeavours, praising the good cooperation with the Ministry of Environment, the National Bureau, and the Small and Medium Business Development Agency ([SMBDA](#)). Their involvement helped collect national data and list enterprises together with their waste profile. Here, a future recommendation would be to identify data in relation to the Small and Medium-sized Enterprises (SMEs) and to inform the involved representatives of the advantages and benefits of cooperation (which would later feed into drafting cooperation agreements and ensuring proper data collection).
 - (online) **Mr Irakli Legashvili**, Waste Mapping Expert, REC Georgia, enquired about the possibility to share information from Georgia to replicate the waste exercise in other regions.
 - Through the identified challenges (data collection, digital and fiscal tools, regulation, and information sharing) efficiency became essential in accelerating circularity.
 - The issues related to digitalization had a major impact on production, as the private sector was not ready to provide timely information on sources of pollution or production cycles. Some companies were also discouraged from investing in expensive means to reuse and recycle (difficult to challenge the mentality that waste can only be disposed of).
 - **Mr Volodymyr Popovych**, Coordinator in the West region, RECP Centre (RECP) of Ukraine mentioned the relevance of having experts conducting on-the-ground visits to the pilot regions in Ukraine. For a more effective industrial waste mapping exercise and proper data collection, he recommended engaging large and medium-sized industries, as SMEs do not usually analyse waste generation in detail.
 - Receiving support from local authorities was equally important. In Ukraine, video exchanges were conducted with chief ecologists who already knew the enterprises in the two regions. The ecologists were trusted to provide their data as an example which helped the experts compile a long list of indicators.
 - In the future, it would be beneficial to cooperate with companies in more depth so they understand their role and potential advantages for conducting industrial waste.
 - The experts also sent individual surveys, but only a handful of companies filled out the questionnaire, making solution difficult to reach.
 - More individual visits were encouraged, and a proposal to sign a confidentiality agreement with the enterprises to assure a proper data collection and management.
 - When asked by Mr Krzysztof Michalak about the involvement of environmental authorities, Mr Popovych confirmed the experts contacted chief ecologists which were also the representatives from the territorial communities; they cooperated on data collection and joined the experts in the field visits to all enterprises.
 - (online) **Mr Andrii Vorfolomeiev**, Director, Resource Efficient and Cleaner Production Centre, Ukraine, further developed lessons learned and emphasised the critical importance of gathering reliable data.

- When selecting pilots for these activities, the RECP Centre worked with communities (formed out of villages and or towns). On paper, the official statistics of the two communities showcased hundreds of companies, but in reality, only around 20 enterprises actually existed.
 - It can be the case that official statistics and reality are very different, the same about a company's perception of waste.
 - When visiting all involved enterprises, the discussions mainly revolved around the need for data and collaboration with bigger cities. The smaller the community, the easier it was to reach real companies and gather real data, however, identifying waste streams was problematic because of the scale of the companies.
- **Mr Harutyun Alpetyan**, Program Manager, Lecturer, Circular Economy Researcher, AUA Acopian Center for the Environment, American University of Armenia reaffirmed the importance of data collection, especially for the implementers of the EU4Environment programme, which should include a data component in their capacity building efforts. Waste classification was a major issue due to the lack of available data, which impeded the reporting process, not only in the pilot countries but also in other countries such as Armenia. Here, the policy-making based on the current data was not fully relevant as policies and decisions were either inaccurate or unfit for purpose.
- **Mr Shahriyar Mustafayev**, Chairman of Housing Department, Executive Power of Mingachevir city, Azerbaijan mentioned that at the national level, a report on waste existed only on the waste resulting from production and on municipal waste. From internal discussions with experts, it was observed that the numbers used were not reflective of the industrial waste. In the previous year, representatives from the European Commission conducted a visit to Azerbaijan; according to the environmental performance review conducted then, a recommendation was made to increase the administration of industrial waste. Here, the Ministry of Ecology and Natural Resources would work more to disseminate accurate data and improve the way industrial waste is being mapped and dealt with.
- **Mr Tofiq Hasanov** reiterated that the waste mapping report in Azerbaijan did not only reflect the data shared from the statistical office, but also from the companies themselves, as the experts worked closely with them, visited them, and collaborated on the preparation of the reports.

Item 5. Implementation of industrial symbioses: Practical steps towards a circular economy based on the IWM

The participants took note of:

- The presentation of **Mr Tomas Knuts**, Project Manager, Jakobstad Region Development Company Concordia Ltd, Finland who describe the case of the Jakobstad Region, where sustainability was part of the park's brand, attracting new talents and engaging new enterprises.
 - The Alholmen Industrial Park (AIP) hosted more than 60 companies (10 industries and 53 service companies), having a strong concentration of global businesses with a combined turnover of more than €1 billion per year.
 - Regarding waste, the park prepared a high-level action plan for the development of circular economy value chains; this included a traditional forestry integrated directly into a diversified concentration of export-oriented companies.
 - The park also included infrastructure operators in the area of port services and the area's largest biofuel power plant.
 - The business ecosystem forest industry has long been a frontrunner in the bioeconomy in the region and the world. Moreover, the symbiosis existing between the operators within the forestry industry was a good example of material flows within circular economy. Here, wood chips, sawdust, pulpwood and other resources were used as side streams in the wood

industry. As well, the area also included were two luxury yacht companies working on composite processing (ensuring their yachts a life span of almost 50 years).

Item 6. Moderated break-out discussion on the role of IWM as a tool to identify technical, systematic and institutional issues in the transition to the circular economy

The participants engaged in a second Menti exercise, where a small online quiz was launched asking about the stakeholders who exercise the greatest influence on the transition to circular systems. Government, citizens, businesses, decision-makers, consumers and international entities were the top choices from over 40 replies.

The participants took part in:

- An interactive session consisting of an exercise to determine the stakeholders and issues related to implementing industrial waste mapping. Four groups were established (capturing the perspectives of the government, private sector, NGOs, academia, and an online group focusing on all). The participants were then invited to join a group based on preference and experience. Each group used a flipchart to brainstorm and develop a system for identifying key technical, systematic, and institutional issues in the transition to circular systems. Lasting 45 minutes, the session ended with a summary of the key findings from group, presented by:
 - **Mr Alastair Carruth** who presented the results from the first group. Here, the participants had a good discussion based on the experience of Azerbaijan's development of an industrial park and the challenges stakeholders encountered in the process: creating incentives (including financial) for embracing circular solutions, the need for physical space and proper infrastructure to meet the ambitious targets, the lack of systematic solutions focusing on awareness raising, transparency, and strategies needed to inflict behavioural change.
 - **Mr Henrik Toremark** who gathered businesses and NGOs in the second group and reported a fruitful discussion on the EaP countries' needs for a fundamental infrastructure for waste collection and management. Another challenge was the lack of experience and knowledge, as reported by the participants of Moldova, who gave accounts of situations where there was confusion over recycling among stakeholders, over waste types, or the quality of products resulting from waste. Thirdly, a lack of contacts and knowledge-sharing for industrial synergies was also a highly discussed problem.
 - **Mr Harutyun Alpetyan** who seconded the challenges, to which his group added the lack of data availability and accuracy, poor regulation, and low incentive for waste management. As long as landfilling was presented as a waste management option, the infrastructure, human capacity, and municipal engagement for circularity would remain low. In the case of systemic practical issues, there was a question on what type of information should be prioritized and made public. Input, output, and waste demand, the third group deemed, should be shared among stakeholders, including academia.
 - **Ms Emma Danielsson** who pointed out that the online group remarked how academic knowledge was not reaching the right people in society. They suggested that data availability should be standardised and adapted to usable formats, and; pointed out systematic challenges such as legislation and low punishments for polluters and free-riders.
- **Mr Alastair Carruth** closed the session by presenting the results of the three online Menti quizzes and describing the main findings.

Item 7. Way ahead and next steps

The participants took note of:

- During her closing remarks **Ms Michaela Hauf**, DG NEAR, referred to the key conclusions of the discussions of the previous day. Ms Hauf then shared three personal takeaways focusing on the

achievements of the programme, the importance of absence of silos, and the focus on sustainability going forward. During both days, achievements were presented for different pilot projects, proving that, indeed, EU4Environment was delivering on the ground. There was also a great demand from partner countries for support, despite difficult times caused by COVID-19 and the Russian aggression against Ukraine, which proved that the environment still played a key role, in line with the priorities for the Eastern Partnership post-2020 for recovery and resilience. Ms Hauf also stressed that it was crucial for the Ministries of Environment, Economy, and Industry to work together (and involving the statistical offices as well). Another important objective was to push the private and public sectors to work together at the national and local levels and to collaborate more with academia and civil society. Finally, Ms Hauf emphasised that conversations over these two days were not only about environmental sustainability but also about the sustainability of what was achieved under the programme (i.e. the knowledge and capacity which was built) and how to take this forward – even beyond the EU4Environment programme.

The session then concluded with short remarks and thank you notes coming from Mr Krzysztof Michalak and Ms Tatiana Chernyavskaya.

Item 8. Wrap-up of the Side Event

The last session involved a voluntary visit to the Academy of Climate in Paris. There, the participants were given a tour of the Academy, and enjoyed the chance to interact with the hosts, ask them questions, and engage in topical discussions. The representatives from the Academy also presented their strategy for addressing climate change, showcased some of their local and regional projects, and shared their experience in instilling knowledge sharing at the individual, community, and city levels.

Annex 1. Agenda – Day 2

Time	Item
09:00 – 09:30	Welcome coffee and registration of additional participants
09:30 – 10:00 (30 min)	<p>Circular Economy in the European Union</p> <ul style="list-style-type: none"> • Introduction and recent work on circular Economy in the European Union – Ms Guillemette Vachey, Policy Officer - Environment and Climate Action DG NEAR, European Commission
10:00 – 11:00	<p>EU4Environment contribution to Circular Economy</p> <p><i>This session reviews EU4Environment’s contribution to the circular economy and spotlights selected EU4Environment interventions. Key achievements, lessons learned, and recommendations for the future will be presented by implementing partners and country representatives.</i></p> <ul style="list-style-type: none"> • The circularity approach and overview of EU4Environment contributions to its implementation in the Eastern Partner countries - Ms Elisa Tonda, Chief of Resources and Markets Branch, Economy Division, UNEP • Panel discussion moderated by Ms Elisa Tonda: <ul style="list-style-type: none"> – <i>What new targets are set to work towards circularity in waste management strategies/programmes and EPR in selected EaP countries?</i> (UNEP) – <i>What is the role of SMEs in adapting circularity and how can they reconcile their efforts towards resource efficiency and eco-innovation?</i> (UNIDO and UNEP) – <i>What are the current opportunities for financing circularity in the EaP region?</i> (OECD) – <i>What recommendations can be put forward for the future programmes/actions to advance Circular Economy in the region?</i> (UNEP, UNIDO, OECD)
11:00 – 11:30	Coffee break
11:30 – 12:30 (1 hour)	<p>Industrial waste mapping pilots in Azerbaijan, Georgia and Ukraine</p> <p><i>At this moderated session the approach to IWM and results of the IWM exercises in six pilot regions in Azerbaijan, Georgia, and Ukraine will be described. It will also present the considerations and experiences throughout the process, including the delimitation of the IWM, data collection and datasets, results and graphical waste maps. It will then provide a look at the financial, material and environmental approaches to IWM.</i></p> <p>Moderator: Ms. Tatiana Chernyavskaya, Project Manager, UNIDO</p> <ul style="list-style-type: none"> • Overall scope and methodology – Mr. Alastair Carruth, UNIDO International Circular Economy Expert (Sweco International AB)

	<ul style="list-style-type: none"> • Azerbaijan: Baku and Absheron-Khizi regions - Mr Henrik Toremark, UNIDO International Circular Economy Expert (Sweco International AB) • Georgia: Rustavi and Zestaponi regions - Mr. Alastair Carruth • Ukraine: Davydiv and Slavutska regions - Ms. Emma Danielsson and Alastair Carruth, UNIDO International Circular Economy Experts (Sweco International AB)
12:30-13:00	Questions and Answers Session
13:00 – 14:00	Lunch break
14:00 – 14:40	<p><i>IWM Guidelines for EaP countries: Key lessons learnt and recommendations for stakeholders to promote circular economies</i></p> <p><i>This session will share the key lessons learnt and recommendations, focusing on the holistic approach necessary to strengthen waste hierarchy perspective in the governance and legislative and regulatory frameworks to promote circular practices. It will provide recommendations to policy-makers on developing monitoring, organisation, legislation and financial incentives to promote circular economy.</i></p> <ul style="list-style-type: none"> • IWM Guidelines for EaP countries: Key lessons learnt and recommendations for stakeholders to promote circular economies <p>Mr. Alastair Carruth with contributions on in-country lessons by national experts: Mr. Volodymyr Popovych (RECP Center, Ukraine) Mr. Irakli Legashvili (REC Georgia), and Mr. Tofiq Hasanov (ACE Group Consultant LLC, Azerbaijan)</p>
14:40-15:00	<p><i>Implementation of industrial symbioses: Practical steps towards a circular economy based on the IWM</i></p> <p><i>Experience from Alholmen Industrial Park in Jakobstad, Finland will be shared to illustrate how the industrial synergies can be progressed once you have identified some opportunities working on materials for symbioses and solving organisational issues needed.</i></p> <ul style="list-style-type: none"> • Implementation of industrial symbioses: Practical steps towards a circular economy based on the IWM by Mr. Tomas Knuts, Project Manager, Jakobstad Region Development Company Concordia Ltd, Finland
15:00-15:45	<p><i>Moderated break-out discussion on the role of IWM as a tool to identify technical, systematic and institutional issues in the transition to the circular economy</i></p> <p>Moderators: Mr Alastair Carruth , Ms. Tatiana Chernyavskaya, Dr. Johannes Fresner, and Mr. Henrik Toremark</p>
15:45-15:55	<p><i>Way ahead and next steps</i></p> <p>Moderators: Mr. Alastair Carruth and Ms. Tatiana Chernyavskaya</p>
15:55 – 16:10	<p><i>Wrap-up of the Side Event</i></p> <ul style="list-style-type: none"> • Closing remarks by EU, UNEP and UNIDO

Annex 2. List of participants

I agree to my name and function and/or to my image/voice being video/audio recorded and being used by European Commission for publications, both off and on-line, in accordance with the applicable European data protection regulations.

I consent to my contact details (First and Last Name, Organisation, Function, Country represented and e-mail) being included in the list of participants and circulated amongst the meeting participants.

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